

Claims

- [c1] A monument support system for an aircraft comprising:
a plurality of aircraft frame elements;
at least one adapter bridge coupled to said plurality of aircraft frame elements and having a plurality of attachment points;
at least one coupling member; and
at least one monument coupled to said plurality of aircraft frame elements via said at least one adapter bridge and said at least one coupling member.
- [c2] A system as in claim 1 further comprising at least one truss coupled between said at least one coupling member and said at least one adapter bridge.
- [c3] A system as in claim 2 wherein said at least one truss is coupled to said at least one monument via at least one joint.
- [c4] A system as in claim 3 wherein said at least one joint is a pin joint.
- [c5] A system as in claim 2 wherein said at least one truss is a triangular truss.

- [c6] A system as in claim 2 wherein said at least one truss comprises:
a first truss coupled between a first adapter bridge and said at least one monument; and
a second truss coupled between a second adapter bridge and said at least one monument.
- [c7] A system as in claim 2 wherein said at least one truss is translatable relative to said at least one adapter bridge.
- [c8] A system as in claim 1 wherein said at least one coupling member comprises:
a first coupling member coupled between said plurality of aircraft frame elements and said at least one adapter bridge; and
a second coupling member coupled between said at least one adapter bridge and said at least one monument.
- [c9] A system as in claim 8 wherein said first coupling member and said second coupling member are selected from at least one of a tie rod, a lateral tie rod, a vertical tie rod, a strut, a truss, and a bracket.
- [c10] A system as in claim 8 wherein said first coupling member, said at least one adapter bridge, and said second coupling member are in a Z-configuration.
- [c11] A system as in claim 8 wherein said first coupling mem-

ber, said at least one adapter bridge, and said second coupling member transfer load between said at least one monument and an aircraft skin.

[c12] A system as in claim 1 wherein said at least one monument is adjustable in position relative to said adapter bridge via said plurality of attachment points.

[c13] A system as in claim 1 wherein said at least one monument is selected from at least one of a galley, a stowage unit, a lavatory, and a closet.

[c14] An overhead bin and monument support system for an aircraft comprising:
a plurality of aircraft frame elements;
a plurality of adapter bridges coupled to said plurality of aircraft frame elements and having a plurality of attachment points;
at least one coupling member coupled to said plurality of adapter bridges;
at least one bin coupled to said plurality of aircraft frame elements via said plurality of adapter bridges; and
at least one monument coupled to said plurality of aircraft frame elements via said plurality of adapter bridges and said at least one coupling member.

[c15] A system as in claim 14 wherein said at least one bin is

in the form of at least one of a center bin, an outboard bin, and an overhead bin.

[c16] A system as in claim 14 wherein said at least one bin is coupled to said plurality of adapter bridges via at least one of said at least one coupling member.

[c17] A system as in claim 14 wherein said plurality of adapter bridges comprise:
a first adapter bridge coupled between said plurality of aircraft frame elements and a vertical coupling member;
and
a second adapter bridge coupled between said plurality of aircraft frame elements and a lateral coupling member.

[c18] A system as in claim 14 wherein said plurality of aircraft frame elements are arched and extend laterally and radially across the aircraft and support an aircraft skin.

[c19] A system as in claim 14 wherein said plurality of adapter bridges are coupled to said plurality of aircraft frame elements via a plurality of brackets.

[c20] A system as in claim 19 wherein said plurality of brackets are selected from at least one of a clevis, a clevis having an extended foot, a fitting, and a frame pivot fitting.

[c21] A system as in claim 14 wherein said plurality of adapter bridges are coupled to said plurality of aircraft frame elements via at least one frame pivot fitting and is rotatable relative to said at least one frame pivot fitting.

[c22] A system as in claim 14 wherein said plurality of adapter bridges comprise:
a first adapter bridge coupled to a lower portion of said at least one bin; and
a second adapter bridge coupled to an upper portion of said at least one bin.

[c23] A system as in claim 22 wherein said first adapter bridge is non-rotatable.

[c24] A system as in claim 22 wherein said second adapter bridge is rotatable.

[c25] A system as in claim 22 wherein said first adapter bridge is coupled to said plurality of aircraft frame elements via a fixed clevis.

[c26] A system as in claim 22 wherein said second adapter bridge is coupled to said plurality of aircraft frame elements via a frame pivot fitting.

[c27] A system as in claim 14 wherein said at least one coupling member is selected from at least one of a tie rod, a

lateral tie rod, a vertical tie rod, a strut, a truss, and a bracket coupled between said plurality of aircraft frame elements and said at least one bin.

- [c28] A system as in claim 14 wherein said at least one bin is coupled to said plurality of aircraft frame elements via at least one coupling member selected from a tie rod, a strut, and a bracket.
- [c29] A system as in claim 14 further comprising:
a first set of coupling members coupled between said plurality of adapter bridges and said at least one bin; and
a second set of coupling members coupled between said plurality of aircraft frame elements and said at least one bin.
- [c30] A system as in claim 14 wherein said plurality of adapter bridges comprises a plurality of sides, each side having a plurality of attachment points.
- [c31] A system as in claim 14 wherein said plurality of adapter bridges is formed of a plurality of bridge plates.
- [c32] A system as in claim 14 wherein said at least one bin is position adjustable relative to said at least one adapter bridge via said plurality of attachment points.
- [c33] An overhead bin and monument support system for an

aircraft comprising:

a plurality of aircraft frame elements;

a plurality of bin adapter bridges and monument adapter bridges coupled to said plurality of aircraft frame elements;

at least one coupling member coupled to said plurality of monument adapter bridges;

at least one bin coupled to said plurality of aircraft frame elements via said plurality of bin adapter bridges; and

at least one monument coupled to said plurality of aircraft frame elements via said plurality of monument adapter bridges and said at least one coupling member.

[c34] A system as in claim 33 wherein said plurality of adapter bridges comprise:

a first adapter bridge coupling said at least one bin to said plurality of aircraft frame elements; and

a second adapter bridge coupling said at least one monument to said plurality of aircraft frame elements.

[c35] An aircraft comprising:

a skin;

a plurality of aircraft frame elements coupled to said skin; and

an overhead bin support system comprising;

at least one adapter bridge coupled to said plurality of aircraft frame elements and having a plurality of attach-

ment points; and

at least one bin coupled to said plurality of aircraft frame elements via said at least one adapter bridge.

[c36] An aircraft as in claim 35 wherein said at least one bin is position adjustable relative to said at least one adapter bridge via said plurality of attachment points.

[c37] An aircraft comprising:
a skin;
a plurality of aircraft frame elements; and
an overhead monument support system comprising;
at least one adapter bridge coupled to said plurality of aircraft frame elements and having a plurality of attachment points;
at least one coupling member coupled to said at least one adapter bridge; and
at least one monument coupled to said plurality of aircraft frame elements via said at least one adapter bridge and said at least one coupling member.

[c38] An aircraft as in claim 37 wherein said at least one monument is position adjustable relative to said at least one adapter bridge via said plurality of attachment points.

[c39] A method of configuring an overhead aircraft support system for interior features of an aircraft comprising:

determining interior features;
determining a plan layout of said interior features; and
attaching bins and monuments to a plurality of aircraft
frame elements via a plurality of adapter bridges having
a plurality of attachment points corresponding to a plu-
rality of bin and monument positions.

[c40] A method as in claim 39 further comprising coupling a
plurality of coupling members between said plurality of
adapter bridges and said bins and monuments.